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EXAMINER	
CHU, KIM KWOK	
ART UNIT	**PAPER NUMBER**
2653	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/852,002	PARK, SOO-HAN	
	Examiner	Art Unit	
	Kim-Kwok CHU	2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Amendment filed on 6/22/2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,13,14,17-19,28,29 and 32* is/are rejected.

7)☒ Claim(s) *5-12,15,16,20-27,30 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Remarks

1. Applicant's Remarks filed on June 22, 2004 have been fully considered .

(a) Applicant states that Ohyama's light receiving device 4a only receives either the plus or minus first order diffracted beam and not the three rays recited in claim 3 (page 14 of the Remarks, last two lines). Accordingly, a newly found patent of Abe is used as a prior art to reject claim 3; and

(b) Applicant states that the cited prior art of Noda does not cure the defects of Kajiyama as in claims 17 and 32, because Noda teaches a single light source optical pickup. Accordingly, although Kajiyama teach two laser light sources, only one photodetector device is used. On the other hand, the lay out of the photodetector device depends on a chosen arithmetic operation so that detected signals can be extracted. For example, Applicant claims a photodetector structure similar to Noda's.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> *A person shall be entitled to a patent unless --*
> *(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.*

3. Claims 1 and 2 are rejected under 35 U.S.C. § 102(e) as being anticipated by Kajiyama et al. (U.S. Patent 6,552,990).

Kajiyama teaches an apparatus for recording and/or reproducing data on and/or from various types of optical disks having all the elements and means as cited in claims 1 and 2. For example, Kajiyama teaches the following:

(a) as in claim 1, a first laser diode 1a emits a first laser beam (Fig. 2; column 8, lines 18-23);

(b) as in claim 1, a second laser diode 1b emits a second laser beam (Fig. 2; column 8, lines 18-23);

(c) as in claim 1, a diffraction grating 5 selectively splitting the first and the second laser beams into a main ray and two sub-rays (Fig. 20);

(d) as in claim 1, the diffraction grating 5 is movable between a first position and a second position along an optical axis (Fig. 2; column 7, lines 55 and 56); and

(e) as in claim 1, a photo-detector 8 for receiving the main ray at a first location based on the first position of the diffraction grating (Fig. 2);

(f) as in claim 1, a photo-detector 8 for receiving the main ray of the first laser beam and second laser beam at a first location and a second location based on the first and second position of the diffraction grating (Fig. 2);

(g) as in claim 1, the photo-detector 1 having at least a first detecting portion 1a for receiving the main ray of the first beam (Fig. 2);

(h) as in claim 1, the photo-detector 1 having a second detecting portion 1b for receiving the main ray of the second beam (Fig. 2);

(i) as in claim 1, the first and second laser diode 1a, 1b are formed in one package 1 (Fig. 2); and

(j) as in claim 2, the photodetector 1 is a single unit on which both the first and second detecting portions 1a, 1b are formed (Fig. 2).

4. Claims 3, 4, 13, 14, 18, 19, 28 and 29 are rejected under 35 U.S.C. § 102(e) as being anticipated by Abe et al. (U.S. Patent 6,084,843).

Abe teaches a disk player having all the elements and means as cited in claims 3 and 4. For example, Abe teaches the following:

(a) as in claim 3, a first laser diode 21A emitting a first laser beam to a first optical disk 41A (Fig. 10);

(b) as in claim 3, a second laser diode 21B emitting a second laser beam to a second optical disc 41B (Fig. 10);

(c) as in claim 3, a diffraction grating 25 selectively splitting the first and the second laser beams into three rays depending on which optical disk is to be accessed, wherein the three rays comprise a main ray and two sub-rays (Figs. 3, 6 and 7; diffractive grating 25 splits a light beam into zero order and plus, minus 1st order rays);

(d) as in claim 3, a photo-detector 28 actively receiving the three rays of the first laser beam and the three rays of the second laser beam at different detecting portions for data recording and/or reproduction and error detection and compensation (Fig. 11; column 4, lines 50-58);

(e) as in claim 3, the detecting portions comprise a central detecting portion and two peripheral detecting portions (Fig. 11);

(f) as in claim 4, the photodetector 28 receives the main ray of the first laser beam on the central detecting portion to determine a focus error (Fig. 11; column 14, lines 60-65);

(g) as in claim 4, the main ray of the first laser beam is used to record and/or reproduce the data on/from the first optical disk (Fig. 11); and

(h) as in claim 4, the photodetector receives the sub-rays of the first laser beam on the peripheral detecting portions to determine a tracking error (Fig. 11; column 14, lines 55-60).

5. Claims 13 and 14 have limitations similar to those treated in the above rejection, and are met by the references as discussed above. Claims 13 and 14 however also recite the following limitations which are taught by the prior art of Abe. For example, Abe teaches the following:

(a) as in claim 13, the photo-detector is a six-split photo-detector comprising four cells on a central detecting portion and two cells on peripheral detecting portions (Fig. 10);

(b) as in claim 14, the main ray of the first laser beam arranged on an optical axis is detected from the central detecting portion 28A to record and/or reproduce the data on/from the first optical disk (Fig. 11); and

(c) as in claim 14, the main ray of the second laser beam strayed from the optical axis is detected from one of the peripheral detecting portions 28B to record and/or reproduce the data on/from the second optical disk (Fig. 11).

6. Method claims 18 and 19 are drawn to the method of using the corresponding apparatus claimed in claims 3 and 4. Therefore method claims 18 and 19 correspond to apparatus claims 3 and 4 and are rejected for the same reasons of anticipation as used above.

7. Method claim 28 is drawn to the method of using the corresponding apparatus claimed in claim 3. Therefore method claim 18 corresponds to apparatus claim 3 and is rejected for the same reasons of anticipation as used above.

8. Claim 29 has limitations similar to those treated in the above rejection, and is met by the references as discussed above. Claim 29 however also recites the following limitations which are taught by the prior art of Abe. For example, Abe teaches the following:

(a) as in claim 29, the main ray of the first laser beam arranged on an optical axis is detected from the central detecting portion 28A to record and/or reproduce the data on/from the first optical disk (Fig. 11); and

(b) as in claim 29, the main ray of the second laser beam strayed from the optical axis is detected from one of the peripheral detecting portions 28B to record and/or reproduce the data on/from the second optical disk (Fig. 29).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

10. Claims 17 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiyama et al. (U.S. Patent 6,552,990) in view of Noda et al. (U.S. Patent 5,153,863).

Kajiyama teaches a compatible disk player very similar to that of the present invention. For example, Kajiyama teaches the following:

(a) as in claim 17, a laser beam source 1 comprising a first laser diode 1a and a second laser diode 1b (Fig. 2; column 8, lines 18-23);

(b) as in claim 17, the first laser diode 1a emits a first laser beam of a first wavelength for recording and/or reproducing data on/from a first optical disk 9 comprising a first recording density (Fig. 2; column 8, lines 18-23);

(c) as in claim 17, the second laser diode 1b emits a second laser beam of a second wavelength for recording and/or

reproduce the data on/from the second optical disk 99 comprising a second recording density (Fig. 2; column 8, lines 18-23);

(d) as in claim 17, a diffraction grating 5 selectively splitting the first and the second laser beams into a main ray and two sub-rays depending on which optical disk is to be accessed (Fig. 20);

(e) as in claim 17, the diffraction grating 5 is movable between a first position and a second position in the direction of the optical axis based upon which optical disk is to be accessed (Fig. 2; column 7, lines 55 and 56);

(f) as in claim 17, a beam splitter 4 selectively reflecting the first laser beam toward the first optical disk and the second laser beam toward the second optical disk;

(g) as in claim 17, an annular cover lens 5 selectively adjusting a size of the first laser beam on the first optical disk and the second laser beam on the second optical disk (Fig. 2; column 9, lines 21-32);

(h) as in claim 17, an objective lens 7 selectively focusing the first laser beam on a recording surface of the first optical disk and the second laser beam on a recording surface of the second optical disk (Fig. 2); and

(i) as in claim 17, a photo-detector 8 selectively receives the first laser beam to determine a focus error and tracking error (Fig. 2);

(j) as in claim 17, the photodetector 8 receives the first laser beam to record and/or to reproduce the data on from the first optical disk (Fig. 2);

(k) as in claim 17, the photodetector 8 receives the second laser beam from the second optical disk (Fig. 2); and

(l) as in claim 17, the photo-detector 8 receives the second laser beam to determine the focus error and the tracking error on the second optical disk (Fig. 2).

However, Kajiyama does not teach the following:

(a) as in claim 17, the photo-detector comprises a central detecting portion and two peripheral detecting portions;

(b) as in claim 17, the photo-detector selectively receives the main ray of the first laser beam on the central detecting portion to determine a focus error and to record and/or reproduce the data on/from the first optical disk and receives the sub-rays of the first laser beam on the peripheral detecting portions to determine a tracking error, and

(c) as in claim 17, the photo-detector receives the main ray of the second laser beam on the peripheral detecting portions to record and/or reproduce the data on/from the second

optical disk and receives one of the two sub-rays on the central detecting portion to determine the focus error and the tracking error on the second optical disk.

Noda teaches an optical pickup having the following features:

(a) the photodetector receives the main ray of the first laser beam on the central detecting portion 14A-14D to determine a focus error VFO and to record and/or reproduce the data on/from the first optical disk (Figs. 4 and 5; column 5, lines 14-20);

(b) the photodetector receives the sub-rays of the first laser beam on the peripheral detecting portions 14E and 14F to determine a tracking error VTR (Figs. 4 and 5; column 5, lines 14-20);

(c) the photodetector receives the main ray of the laser beam on one of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk (Figs. 4 and 5, column 5, lines 27-31); and

(d) the photodetector receives one of the two sub-rays on the central detecting portion to determine a focus error and a tracking error on the second optical disk, wherein the central detecting portion comprises cells 14A, 14B, 14C, and 14D, and the peripheral detecting portions comprise cells 14E and 14F (Figs. 4 and 5; column 5, lines 14-20).

There are various ways to lay out photodetector elements in order to extract detected signals. For example, Kajiyama's photodetecting elements are configured differently than Applicant's. However, a photodetector configuration such as Noda's has an advantage of extracting detected signals with simple arithmetic operations. Hence, to receive all components of light rays in either first or second beams by Kajiyama's optical pickup, it would have been obvious to one of ordinary skill in the art to replace Kajiyama's photodetector elements with photodetector elements such as Noda's, because Noda's photodetector arrangement uses a standardized electronic circuit to obtain recorded signals with its servo components at the same time.

11. Method claim 32 is drawn to the method of using the corresponding apparatus claimed in claim 17. Therefore method claim 32 corresponds to apparatus claim 17 and is rejected for the same reasons of obviousness as used above.

Allowable Subject Matter

12. Claims 5-12, 15, 16, 20-27, 30 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claims 5 and 20, the prior art of record fails to teach or fairly suggest the following features:

(a) the photodetector receives the main ray of the second laser beam on one of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk, and receives one of the two sub-rays on the central detecting portion to determine a focus error and a tracking error on the second optical disk, wherein the central detecting portion comprises cells A, B, C, and D, and the peripheral detecting portions comprise cells E and F.

As in claims 12 and 27, the prior art of record fails to teach or fairly suggest the following features:

(a) an error occurring due to initial positions of the first laser diode and the second laser diode is compensated for by selectively moving the diffraction grating between a first position and a second position, the first position being such

that the main ray of the first laser beam is incident on the central detecting portion, while the two sub-rays are incident on the peripheral detecting portion, and the second position being such that the main ray of the second laser beam is incident on one of the peripheral detecting portions, while one of the two sub-rays is incident on the central detecting portion.

As in claims 15 and 30, the prior art of record fail to teach or fairly suggest the following features:

(a) receiving the main ray of the first laser beam on four cells of the central detecting portion to determine a focus error and to record and/or reproduce the data on/from the first optical disk;

(b) receiving the sub-rays of the first laser beam on two cells of the peripheral detecting portions, respectively, to determine a tracking error;

(c) receiving the main ray of the second laser beam on one of the two cells of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk; and

(d) receiving one of the two sub-rays of the second laser beam on the four cells of the central detecting portion to determine a focus error and a tracking error on the second optical disk.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

14. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C. 20231 Or faxed to:

(703) 872-9306 (for formal communications intended for entry. Or:

(703) 746-6909, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim CHU whose telephone number is (703) 305-3032 between 9:30 am to 6:00 pm, Monday to Friday.

KC 10/17/04

Kim-Kwok CHU
Examiner AU2653
October 17, 2004

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